

# Percutaneous suprapubic endoscopy for treatment of bladder tamponade

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## Abstract

*Suprapubic catheterisation is generally considered a safe procedure. It can, however, be associated with complications including haematuria. It is usually self-limiting and easily treated with non-surgical measures but at times formal treatment in the operating room may be required. We present an endoscopic management of bladder tamponade through a percutaneous approach in a 21-year-old man with the fibrotic defect completely occluding his posterior urethra preventing cystoscopic clot evacuation. To our knowledge, this is the first reported case of minimally invasive treatment of bladder tamponade using a suprapubic access. We believe this challenging case will serve as an aid to management of similar episodes.*

**Key words:** bladder tamponade, urethral distraction, suprapubic treatment.

## Introduction

Suprapubic catheterisation is generally considered a safe procedure. It can, however, be associated with complications including haematuria [1]. It is usually self-limiting and easily treated with non-surgical measures but at times formal treatment in the operating room may be required [2]. Here we present an endoscopic management of bladder haemorrhage through a percutaneous approach in a man with posterior urethral distraction defect preventing cystoscopic clot evacuation. To our knowledge, this is the first reported case of minimally invasive treatment of bladder tamponade using a suprapubic access.

We believe this case will serve as an aid to management of similar episodes.

## Case report

A 21-year-old man was admitted electively to the Urology Department for investigation of a urethral

disruption, caused by traumatic pelvic fracture, sustained 12 weeks earlier in a road traffic accident. He was kept with a 10 F suprapubic catheter, which had been placed via a percutaneous approach in an acute setting. The patient had no voluntary or involuntary voiding and also had suffered from an erectile dysfunction since the accident. Interventional treatment of his pelvic and right lower extremity fractures had been completed and he was able to walk independently with crutches.

During hospitalisation a cystogram with simultaneous retrograde urethrogram followed by urethroscopy was performed. They revealed severe distraction defect and fibrosis involving the entire posterior urethra with normal appearance of the bladder and its neck. An attempt to replace the suprapubic catheter, via the existing tract, was undertaken. It was not successful however, due to technical difficulties with a Seldinger guidewire and additional fluid escape from the bladder, which resulted in loss of bladder disten-

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sion. Consequently a 14 F suprapubic catheter was placed successfully below the primary insertion site and rosé coloured urine was obtained. The patient's initial urine output while in the recovery room was good and he was subsequently transferred back to the ward. As haematuria continued a bladder lavage along with parenteral ethamsylate and E-aminocaproic acid was commenced. Despite conservative measures haematuria deteriorated further over night and the patient started to complain of lower abdominal pain. There was a palpable mass in the suprapubic region. The patient's blood tests and abdominal ultrasound were arranged urgently and revealed a haemoglobin drop from 14.0 g/dl to 10.7 g/dl and a large haematoma within the bladder. Bladder tamponade was therefore diagnosed and the patient was transferred promptly to the theatre to have his bladder inspected and haematoma removed. The presence of a complete posterior urethral distraction defect prevented formal cystoscopic clot evacuation through this approach from being carried out. To avoid open surgery a 0.038 inch guidewire as well as guide rod were both inserted into the bladder via the suprapubic catheter. Then, the catheter was removed and metal dilators increasing in size along with a 32 F Amplatz sheath were used to dilate the track and enabled insertion of the resectoscope. A clot of approximately 300 ml volume was evacuated from the bladder. Subsequent endoscopic inspection of the bladder revealed bleeding from the primary suprapubic insertion site. Haemostasis was achieved with a 'roly-ball' and a 20 F three-way Foley catheter was inserted into the bladder. There were no peri- and postoperative complications and the patient was discharged home the next day.

## Discussion

Haematuria following suprapubic catheter insertion occurs in approximately 2% of cases [3]. Treatment of haemorrhage within the bladder should be delivered in a stepwise manner, according to bleeding severity and treatment response [2]. It should start with bladder saline lavage for clot evacuation followed by continuous bladder irrigation through a 3-way Foley catheter once the effluent is clear and free of clots. At this stage E-aminocaproic acid or other oral agents reducing and/or preventing haemorrhage may be used [4]. If the bedside measures are inadequate the patient should have a formal cystoscopic

bladder inspection with clot evacuation and a coagulation of bleeding sites in an operating theatre.

In our case access to the patient's bladder through the urethra was impossible, due to the post-traumatic fibrotic defect completely occluding his posterior urethra. Open surgery to control the haemorrhage remained an option of last resort particularly as it could not be combined with a simultaneous formal reconstruction of the urethral distraction defect, even if the conditions were favourable, and the bleeding site would be very limited as the timing for such repair was inappropriately short.

We therefore accessed the patient's bladder through the suprapubic catheter insertion site using a set of dilators with a 32 F Amplatz. This minimally invasive procedure allowed for insertion of a resectoscope into the bladder and rapid evacuation of clots. Moreover, it enabled very good visualization of the bladder and quick identification of the bleeding site with its subsequent fulguration. A 20 F three-way Foley catheter was inserted into the bladder via the access track.

We believe that the management of a bladder haemorrhage and evacuation of bladder clots through a percutaneous access is a simple, safe and feasible method in order to achieve sustained bleeding control and it can be an alternative to more complex procedures [5]. It should not be used, however, when transitional cell carcinoma is diagnosed or suspected. This approach could be advocated in patients in whom a transurethral approach is impossible or contraindicated and applied conservative measures failed to slow or stop the haemorrhage.

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